

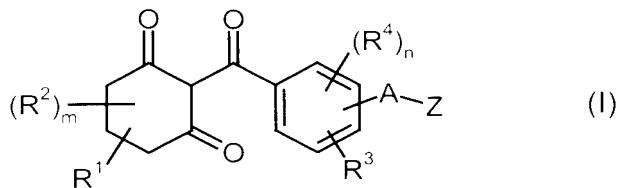
- including all possible tautomeric forms of the compounds of the general formula (I) and the possible salts of the compounds of the general formula (I).

DETAILED DESCRIPTION OF THE INVENTION--

IN THE CLAIMS:

Please amend Claims 1-11 as follows:

1. Substituted benzoylcyclohexanediones of the [general] formula (I),



in which

m represents the numbers 0, 1, 2 or 3,
n represents the numbers 0, 1, 2 or 3,
A represents the single bond or represents alkanediyl (alkylene),
R¹ represents hydrogen or represents [in each case optionally] unsubstituted or substituted alkyl or alkoxycarbonyl,
R² represents [optionally] unsubstituted or substituted alkyl, or together with R¹ represents alkanediyl (alkylene) where in this case m represents 1 and R¹ and R² are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal"),
R³ represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents [in each case optionally] unsubstituted or substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino or dialkylaminosulphonyl,
R⁴ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents [in each case optionally] unsubstituted or substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino or dialkylaminosulphonyl, and

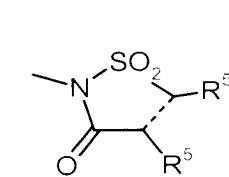
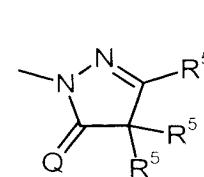
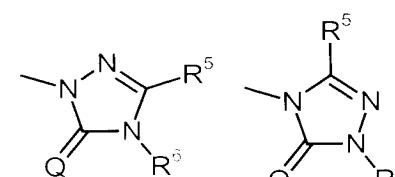
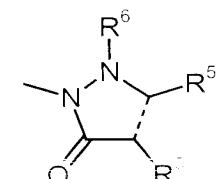
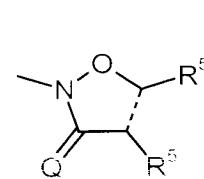
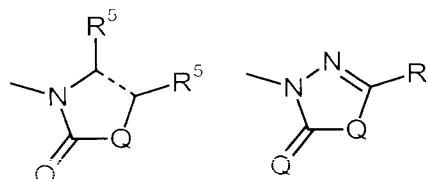
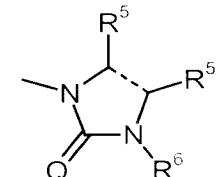
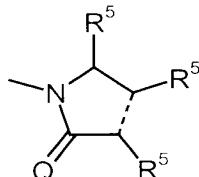
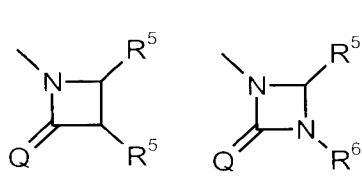
Z represents an [optionally] unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains 1 to 4 heteroatoms [(up to 4 nitrogen atoms and, if appropriate, - alternatively or additionally - one oxygen atom or one sulphur atom, or one SO grouping or one SO₂ grouping)], and which additionally contains one to three groups selected from oxo groups (C=O), thioxo groups (C=S) and mixtures thereof as components of the heterocycle, including all possible tautomeric forms of the compounds of the [general] formula (I) and the possible salts of the compounds of the [general] formula (I).

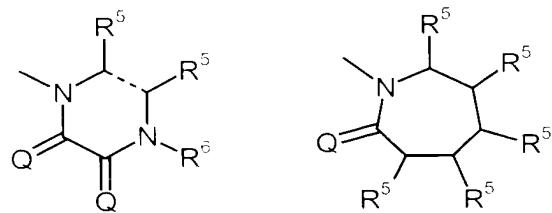
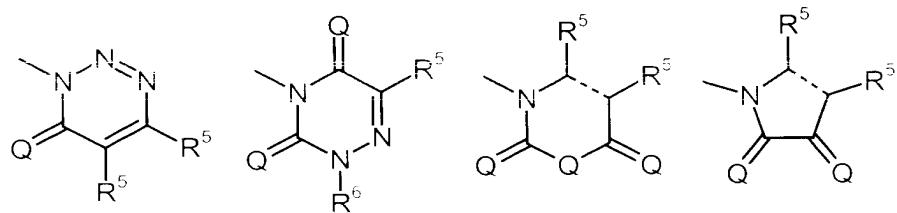
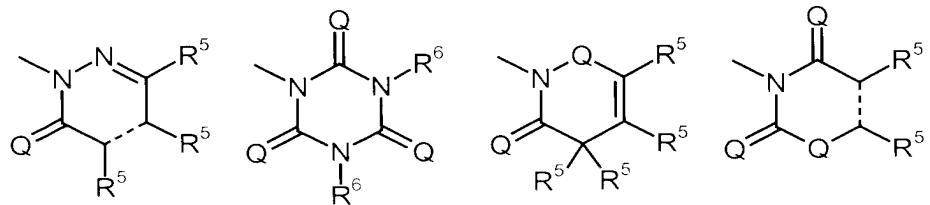
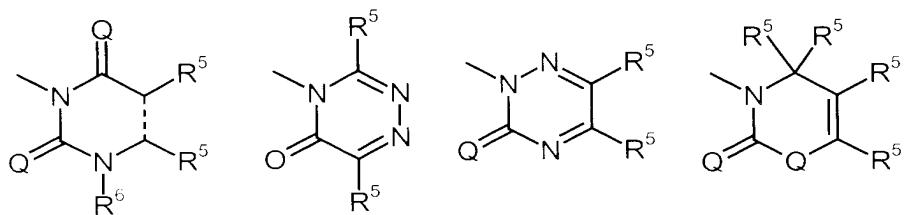
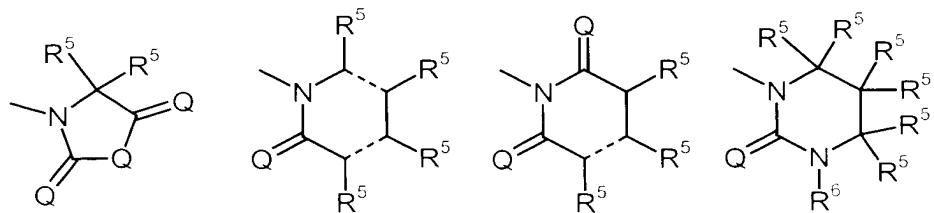
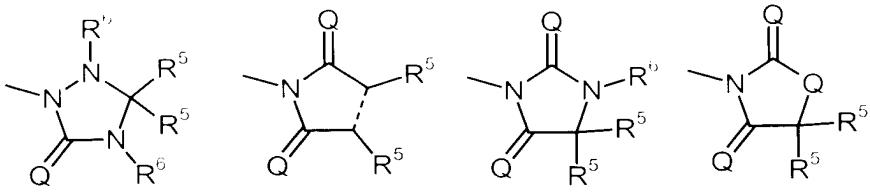
2. Substituted benzoylcyclohexanediones according to Claim 1, [characterized in that] wherein:
 - m represents the numbers 0, 1 or 2,
 - n represents the numbers 0, 1 or 2,
 - A represents a single bond or represents alkanediyl (alkylene) having 1 to 4 carbon atoms,
 - R¹ represents hydrogen, or represents [optionally] unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphanyl- or C₁-C₄-alkylsulphonyl-substituted alkyl having 1 to 6 carbon atoms or represents alkoxy carbonyl having up to 6 carbon atoms,
 - R² represents [optionally] unsubstituted or halogen-substituted alkyl having 1 to 6 carbon atoms, or together with R¹ represents alkanediyl (alkylene) having 2 to 5 carbon atoms, where in this case m represents 1 and R¹ and R² are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal").
 - R³ represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents [in each case optionally] unsubstituted or

halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphinyl- or C₁-C₄-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylamino-sulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups,

R⁴ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents [in each case optionally] unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphinyl- or C₁-C₄-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, and

Z represents one of the heterocyclic groupings below





in which the bond drawn broken in each case denotes a single bond or a double bond,

Q represents oxygen or sulphur,

R⁵ represents hydrogen, hydroxyl, mercapto, cyano, halogen, or represents [in each case optionally] unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphinyl- or C₁-C₄-alkylsulphonyl-substituted alkyl, alkylcarbonyl, alkoxy, alkoxy carbonyl, alkylthio, alkylsulphinyl or alkylsulphonyl having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen- substituted alkylamino or dialkylamino having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen- substituted alkenyl, alkinyl, alkenyloxy, alkenylthio or alkenylamino having in each case up to 6 carbon atoms in the alkenyl or alkinyl groups, or represents [in each case optionally] unsubstituted or halogen- substituted cycloalkyl, cycloalkylalkyl, cycloalkyloxy, cycloalkylthio or cycloalkylamino having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally up to 4 carbon atoms in the alkyl moiety, or represents [in each case optionally] unsubstituted or halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy- substituted phenyl, phenoxy, phenylthio, phenylamino, benzyl, benzyloxy, benzylthio or benzylamino, and

R⁶ represents hydrogen, hydroxyl, amino, alkylideneamino having up to 4 carbon atoms, or represents [in each case optionally] unsubstituted or halogen- or C₁-C₄-alkoxy-substituted alkyl, alkoxy, alkylamino, dialkylamino or alkanoylamino having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen- substituted alkenyl, alkinyl or alkenyloxy having in each case up

to 6 carbon atoms in the alkenyl or alkinyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted cycloalkyl, cycloalkylalkyl or cycloalkylamino having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally up to 3 carbon atoms in the alkyl moiety, or represents [in each case optionally] unsubstituted or halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted phenyl or benzyl, or together with an adjacent radical R⁵ or R⁶ represents [optionally] unsubstituted or halogen- or C₁-C₄-alkyl-substituted alkanediyl having 3 to 5 carbon atoms, or - in the case that two adjacent radicals R⁵ and R⁵ are located at a double bond - together with the adjacent radical R⁵ also represents a benzo grouping.

3. Substituted benzoylcyclohexanediones according to Claim 1, [characterized in that] wherein:

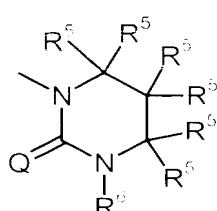
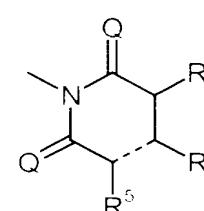
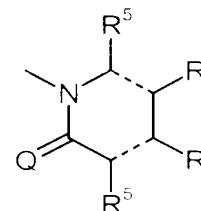
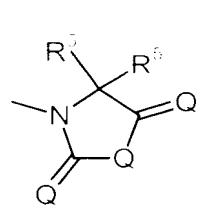
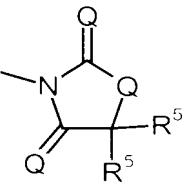
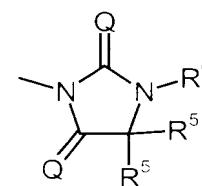
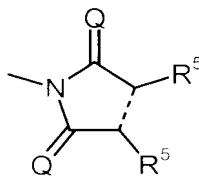
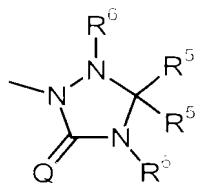
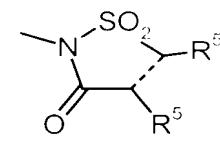
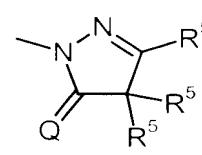
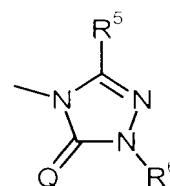
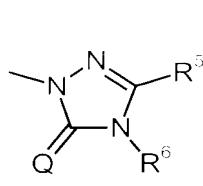
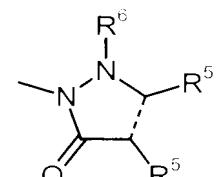
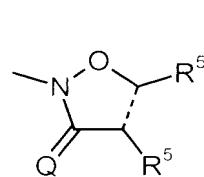
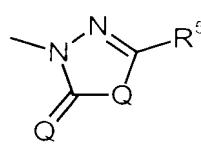
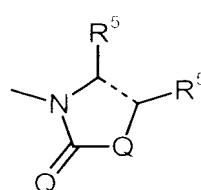
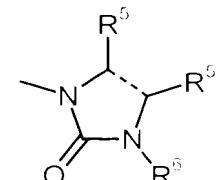
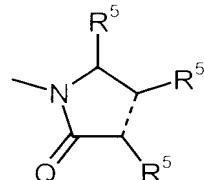
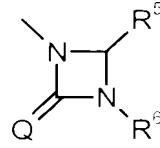
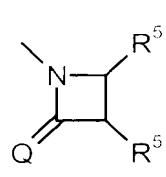
- m represents the numbers 0, 1 or 2,
- n represents the numbers 0, 1 or 2,
- A represents a single bond, methylene, ethylidene (ethane-1,1-diyl) or dimethylene (ethane-1,2-diyl),
- R¹ represents hydrogen, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-pro-poxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, methylsulphonyl-, ethylsulphonyl-, n- or i-propylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i- or s-butyl, or represents methoxycarbonyl, ethoxy-carbonyl, n- or i-propoxycarbonyl,
- R² represents methyl, ethyl, n- or i-propyl, or together with R¹ represents methylene, ethane-1,1-diyl (ethylidene, -CH(CH₃)-), ethane-1,2-diyl (dimethylene, -CH₂CH₂-), propane-1,3-diyl (trimethylene, -CH₂CH₂CH₂-), butane-1,4-diyl (tetramethylene, -CH₂CH₂CH₂CH₂-) or

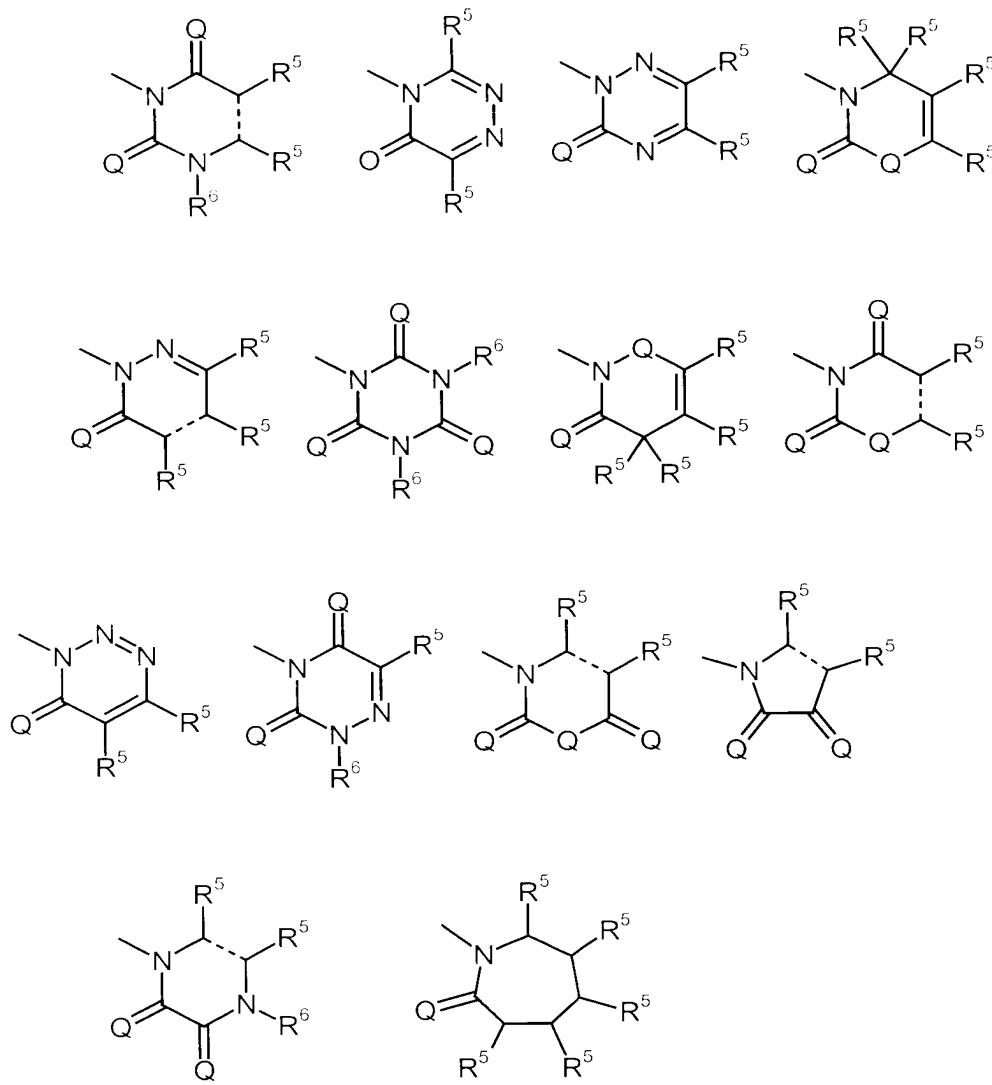
pentane-1,5-diyl (pentamethylene, -CH₂CH₂CH₂CH₂CH₂-), where in this case m represents 1 and R¹ and R² are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal").

R³ represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, fluorine, chlorine, bromine, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, methylsulphonyl- or ethylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methoxy, ethoxy, n- or i-propoxy, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-substituted methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents methylamino, ethylamino, n- or i-propylamino, dimethylamino, diethylamino, dimethylaminosulphonyl or diethylaminosulphonyl,

R⁴ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, fluorine, chlorine, bromine, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, fluorine and chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, methylsulphonyl- or ethylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, fluorine and chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methoxy, ethoxy, n- or i-propoxy, represents in each case optionally fluorine- and/or chlorine-substituted methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents methylamino, ethylamino, n- or i-propylamino, dimethylamino.

diethylamino, dimethylaminosulphonyl or diethylaminosulphonyl, and
 Z represents one of the heterocyclic groupings below





in which the bond drawn broken in each case denotes a single bond or a double bond.

Q represents oxygen or sulphur,

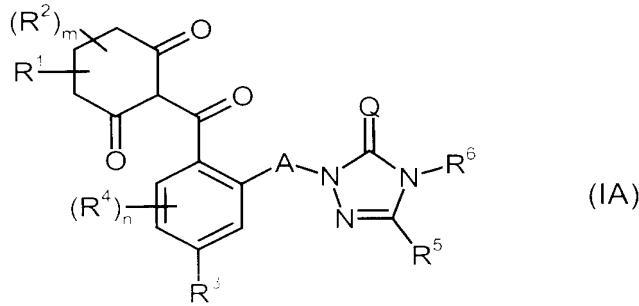
R⁵ represents hydrogen, hydroxyl, mercapto, cyano, fluorine, chlorine, bromine, iodine, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, n-, i-, s- or t-butoxy-, methylthio-, ethylthio-, n- or i-propylthio-, n-, i-, s- or t-butylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, methylsulphonyl-,

ethylsulphonyl-, n- or i-propylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, s- or t-butoxy, methylthio, ethylthio, n- or i-propylthio, n-, i-, s- or t-butylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, represents methylamino, ethylamino, n- or i-propylamino, n-, i-, s- or t-butylamino, dimethylamino, diethylamino, di-n-propylamino or di-i-propylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, propenyloxy, butenyloxy, propenylthio, butenylthio, propenylamino or butenylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl, cyclopropyloxy, cyclobutyloxy, cyclopentyloxy, cyclohexyloxy, cyclopropylthio, cyclobutylthio, cyclopentylthio, cyclohexylthio, cyclopropylamino, cyclobutylamino, cyclopentylamino or cyclohexylamino, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-substituted phenyl, phenoxy, phenylthio, phenylamino, benzyl, benzyloxy, benzylthio or benzylamino, and

R⁶ represents hydrogen, hydroxyl, amino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-, methoxy-, or ethoxy-substituted methyl, ethyl, n- or i-propyl, n-, i- or s-butyl, methoxy, ethoxy, n- or i-propoxy, methylamino, ethylamino or dimethylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted ethenyl.

propenyl, ethinyl, propinyl or propenyloxy, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-substituted phenyl or benzyl, or together with an adjacent radical R⁵ or R⁶ represents [in each case optionally] unsubstituted or methyl- and/or ethyl-substituted propane-1,3-diy (trimethylene) or butane-1,4-diy (tetramethylene), or - in the case that two adjacent radicals R⁵ and R⁵ are located at a double bond - together with the adjacent radical R⁵ also represents a benzo grouping.

4. Substituted benzoylcyclohexanediones according to Claim 1, [characterized by the general] having the formula (IA),



in which

- m represents the numbers 0, 1 or 2.
- n represents the numbers 0, 1 or 2.
- A represents a single bond or represents methylene.
- Q represents oxygen or sulphur,
- R¹ represents hydrogen, methyl, ethyl, n- or i-propyl,

R² represents methyl,

R³ represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphanyl, ethylsulphanyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,

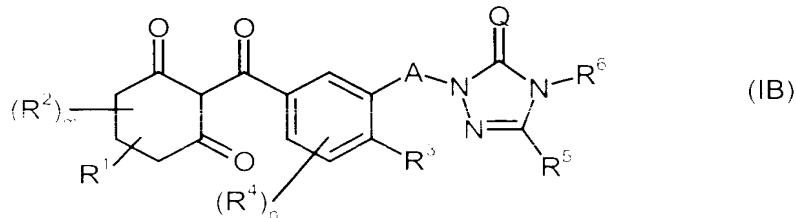
R⁴ represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphanyl, ethylsulphanyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,

R⁵ represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphanyl, ethylsulphanyl, n- or i-propylsulphanyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and

R⁶ represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.

5. Substituted benzoylcyclohexanediones according to Claim 1,

[characterized by the general] having the formula (IB),



[in which]

in which

m represents the numbers 0, 1 or 2,

n represents the numbers 0, 1 or 2.

A represents a single bond or represents methylene,

Q represents oxygen or sulphur,

R¹ represents hydrogen, methyl, ethyl, n- or i-propyl,

R² represents methyl,

R³ represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphiny, ethylsulphiny, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,

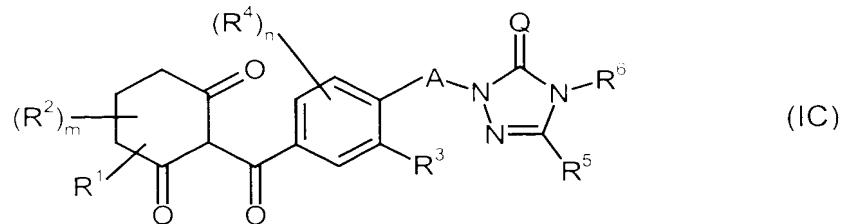
R⁴ represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphiny, ethylsulphiny, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,

R⁵ represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphiny, ethylsulphiny, n- or i-propylsulphiny, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and

R⁶ represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.

6. Substituted benzoylcyclohexanediones according to Claim 1,

[characterized by the general] having the formula (IC).

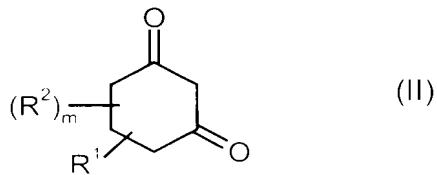


in which

m represents the numbers 0, 1 or 2,
n represents the numbers 0, 1 or 2,
A represents a single bond or represents methylene,
Q represents oxygen or sulphur,
R¹ represents hydrogen, methyl, ethyl, n- or i-propyl,
R² represents methyl,
R³ represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphanyl, ethylsulphanyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
R⁴ represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphanyl, ethylsulphanyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
R⁵ represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphanyl, ethylsulphanyl, n- or i-propylsulphanyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and
R⁶ represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.

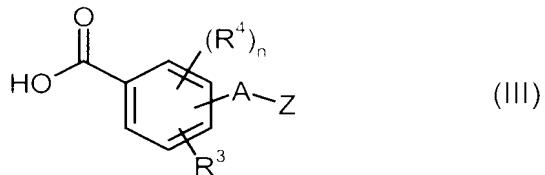
7. Substituted benzoylcyclohexanediones according to [any of Claims 1 to 6, characterized in that] Claim 1, wherein the salts are the sodium, potassium, magnesium, calcium, ammonium, C₁-C₄-alkyl-ammonium, di-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-ammonium, tetra-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-sulphonium, C₅- or C₆-cycloalkyl-ammonium and di-(C₁-C₂-alkyl)-benzyl-ammonium salts.

8. [Process] A process for preparing substituted benzoylcyclohexanediones according to [any of Claims 1 to 6, characterized in that] Claim 1, comprising the step of reacting 1,3-cyclohexanedione or its derivatives of the [general] formula (II).



in which

m, R¹ and R² are each as defined in [any of Claims 1 to 6] Claim 1 [are reacted] with substituted benzoic acids of the [general] formula [Formel] (III),

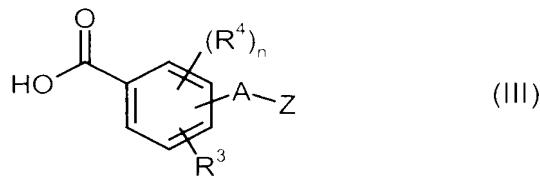


in which

n, A, R³, R⁴ and Z are each as defined in [any of Claims 1 to 6] Claim 1, in the presence of a dehydrating agent to obtain a product [, if appropriate in the presence of one or more reaction auxiliaries and if appropriate in the presence of a diluent,

and, if appropriate, the compounds of the formula (I) obtained in this manner are subsequently subjected in a customary manner, within the scope of the definition of the substituents, to electrophilic or nucleophilic or oxidation or reduction reactions, or the compounds of the formula (I) are converted in a customary manner into salts].

9. Substituted benzoic acids of the [general] formula (III),



in which

n, A, R³, R⁴ and Z are each as defined in [any of Claims 1 to 6] Claim 1, except for the compounds 2-(5-carboxy-2,4-dichloro-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one and 2-(5-carboxy-2,4-dichloro-phenyl)-4,5-dimethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

10. A method of controlling undesirable plants, comprising the step of applying [Use of at least] one or more substituted benzoylcyclohexanedione according to [any of Claims 1 to 6] Claim 1 [for controlling] to undesirable plants or their habitats.

11. Herbicidal compositions, characterized in that they contain [at least] one or more substituted benzoylcyclohexanedione according to [any of Claims 1 to 6] Claim 1 and [customary] an extender[s].

Please add the following claims:

--12. Substituted benzoylcyclohexanediones according to Claim 1, wherein:
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains 1 to 4 heteroatoms selected from the group consisting of nitrogen, oxygen or sulphur, SO, SO₂ or mixtures thereof.

13. Substituted benzoylcyclohexanediones according to Claim 1, wherein:
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains which contains 1 to 4 nitrogen.

14. Substituted benzoylcyclohexanediones according to Claim 1, wherein:
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping

which contains one heteroatom selected from the group consisting of oxygen, sulphur atom, SO and SO₂.

15. Substituted benzoylcyclohexanediones according to Claim 1, wherein:

A represents a single bond or represents alkylene having 1 to 4 carbon atoms.

R¹ represents hydrogen, or represents unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphanyl- or C₁-C₄-alkylsulphonyl-substituted alkyl having 1 to 6 carbon atoms or represents alkoxy carbonyl having up to 6 carbon atoms,

R² represents unsubstituted or halogen-substituted alkyl having 1 to 6 carbon atoms, or together with R¹ represents alkylene having 2 to 5 carbon atoms, where in this case m represents 1 and R¹ and R² are located at the same carbon atom or at two adjacent carbon atoms,

R³ represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphanyl- or C₁-C₄-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphanyl or alkylsulphonyl having up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having up to 4 carbon atoms in the alkyl groups, and

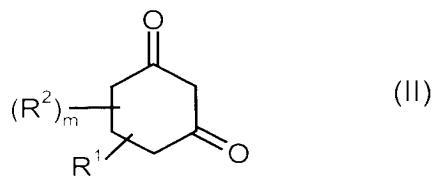
R⁴ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents unsubstituted or halogen-, C₁-C₄-alkoxy-, C₁-C₄-alkylthio-, C₁-C₄-alkylsulphanyl- or C₁-C₄-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphanyl or alkylsulphonyl having up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having up to 4 carbon atoms in the alkyl groups.

16. A process according to Claim 8, wherein the step of reacting the 1,3-cyclohexanedione or its derivatives with the substituted benzoic acids occurs in the

presence of an ingredient selected from the group consisting of reaction auxiliaries, diluents and mixtures thereof.

17. A process according to Claim 8, further comprising the step of subjecting the product to a reaction selected from to group consisting of electrophilic reactions, nucleophilic reactions, oxidation reactions, reduction reactions, and conversions to salts.

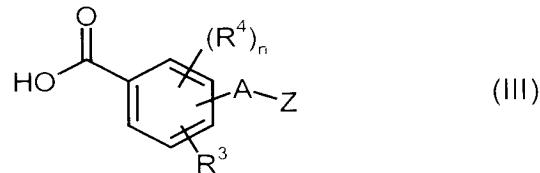
18. A process for preparing substituted benzoylcyclohexanediones according to Claim 1, comprising the step of reacting 1,3-cyclohexanedione or its derivatives of the formula (II),



in which

m, R¹ and R² are each as defined in Claim 1,

with a derivative of a substituted benzoic acid of the formula (III),



in which

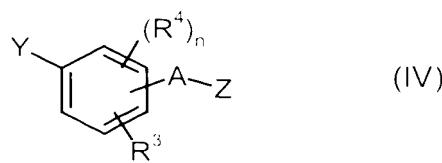
n, A, R³, R⁴ and Z are each as defined in Claim 1,

in the presence of a dehydrating agent to obtain a product;

wherein the derivative of the substituted benzoic acid is selected from the group consisting of carbonyl chlorides, carboxylic anhydrides, carboxylic acid cyanides, methyl carboxylates and ethyl carboxylates.

19. A process according to Claim 8, further comprising the step of preparing the substituted benzoic acids of the formula (III) by:

(a) reacting water and a compound of the formula (IV),



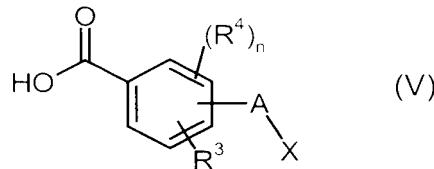
in which

n, A, R³ and R⁴ and Z are as defined in Claim 1, and

Y represents cyano, carbamoyl, halogenocarbamoyl or alkoxy carbonyl,

or

(b) reacting a halogeno(alkyl)benzoic acid of the formula (V),



in which

n, A, R³ and R⁴ are as defined in Claim 1 and

X represents halogen

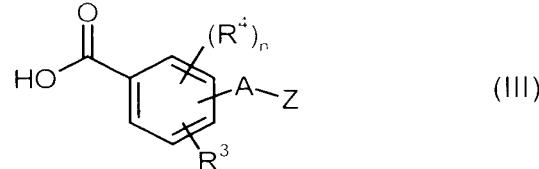
with a compound of the formula (VI)



in which

Z is as defined in Claim 1.

20. Substituted benzoic acids of the formula (III),



in which

n represents the numbers 0, 1, 2 or 3,

A represents the single bond or represents alkylene.